Sale and Distribution of Household Biogas Systems

Location: Rural areas in Vietnam
Type: Household biogas systems
Size: 3,000 systems
Funding: Total: US$89,590
Private: US$89,590
Objective: To commercialize the sale of household biodigesters to improve water quality and meet energy needs.
Duration: 2001
Scale: Rural

Summary

Vacvina, Vietnam's national horticultural training association, has successfully installed roughly 3,000 household biogas systems in rural, agricultural areas of Vietnam. The systems provide an inexpensive source of cooking fuel, displace the need to collect and use fuel wood, remove wastes that often flow into local streams, and improve living conditions through improved sanitation and cleaner air.

In-Country Principles That Attracted Nondonor Financing

- Capacity building and informed decision making

The most important in-country principle that attracted the private financing was the ability to hire and develop a staff with appropriate skills matched to the job. This activity was necessary to bring the project in line with commercial standards, which, in turn, enabled energy product and service transactions to be economically sustainable.

Financing

Total project financing was US$89,500, all of which was provided by E+Co. (E+Co. is a United States [US] corporation that provides business development services and financing to establish enterprises that provide sustainable energy.) The US$89,500 is catalytic seed capital that allows entrepreneurs to move from initial stage ideas to investment, implementation, and growth. With this support, Vacvina has moved from an organization that had no commercial basis to one that shows a positive cash flow on a month-to-month basis.

The Project

Vacvina provided planning and financial assistance to commercialize the sale and distribution of household biogas systems. These systems use the waste from the one to two pigs typically owned by a farmer to produce sufficient methane to meet daily cooking requirements. As such, they displace the need for collecting and using fuel wood, remove the waste stream that often flows into local streams, and can provide a supplementary water source for fish farming.

Eighty percent of Vietnam's population lives in rural areas and practices agriculture. Family plots are extremely small, and farming techniques must be adapted to provide sufficient food for household needs. The most important animal husbandry activity is pig farming. The development of environmentally friendly, renewable energy sources is important for maintaining agricultural production while meeting energy requirements.

The use of the biodigesters eliminates the flow of animal waste into surface water and provides a decontaminated water supply suitable for fish farming and small-scale irrigation. It also improves sanitation and the drinking water supply, the latter of which is enhanced by the ready availability of a fuel source to ensure that water is boiled prior to consumption.

To date, roughly 3,000 household biogas systems have been installed.

The widespread use of biogas plants brings financial, environmental, and health-related benefits to the farmers, the environment, and the community.

The methane produced displaces the use of firewood (estimated at 2,500 kg per family per year, for which families spend between $5 and $10 per month) and provides a supply of boiled water for drinking. Women reap most of the benefits of household biogas plants, as these plants give them additional

time for productive activities. The plants also improve sanitation and promote cleaner air.

Technical Data

The initial biodigesters used a simple, tubular plastic holding tank and readily available fittings to use household cattle, pig, or poultry waste to produce sufficient methane to meet the daily cooking requirements of the family.

These systems initially had low profit margins, but continuing development produced a more efficient, sustainable, and profitable biodigester structure.

Vacvina's new hybrid-technology biodigester with automatic scum control (HTASC) represents a significant improvement over the currently used biogas plants. The design uses a small reinforced concrete unit that is more compact and can be placed below the area used by the piggery to reduce the land area needed by the more basic plastic unit.

Performance Data

Vacvina has sold and successfully installed nearly 3,000 units, representing the equivalent of US$418,000.

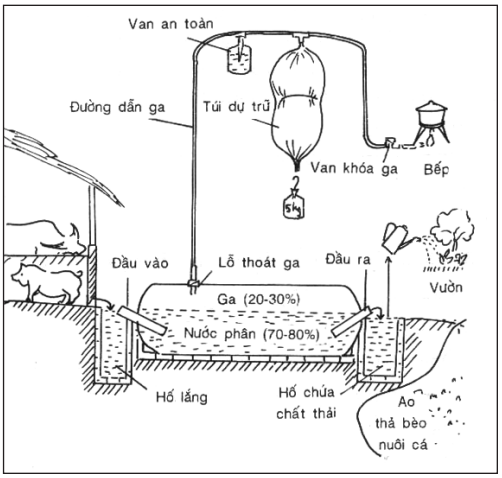
Forty-four technicians have been trained in 11 provinces.

Living conditions have improved through increased sanitation and clean air.

Vacvina has maintained the position it has built in the biogas market, improved the quality of its products, and offered a more permanent system that is simple in design but still modestly priced. The biogas activities that Vacvina has promoted to date have caught the attention of a number of bilateral agencies.

Participants and Roles

Vacvina, with development and financial assistance from E+Co., has moved from an organization that had no commercial basis to one that shows a positive cash flow on a month-to-month basis.



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